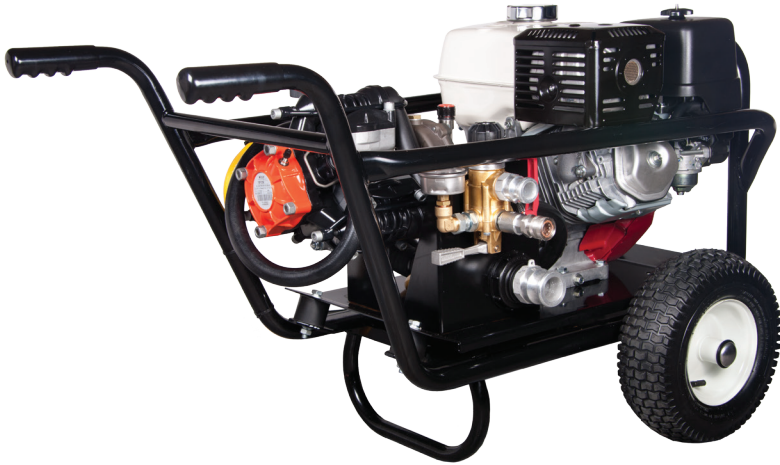




Diaphragm Pump Unit



Operating Instructions

793-1300

THESE INSTRUCTIONS SHOULD BE KEPT WITH THE MACHINE AT ALL TIMES

This manual and any other literature supplied should be read thoroughly before attempting to operate the pump set. Pay particular attention to any instructions relating to safety.

This manual has been compiled to give all the basic information to operate the pump set safely and effectively. It is recommended the manual and it's accompanying literature be read and understood before attempting to operate the equipment.

Following these simple instructions will ensure operator safety and prolong the life of the pump set.

Our policy is to improve our products continuously and we therefore reserve the right to discontinue or change specifications, models or designs without notice or obligation.

EC DECLARATION OF CONFORMITY

Dual Pumps Ltd
Unit 8, Hudson Road
Saxby Road Ind. Est.
Melton Mowbray
Leicestershire LE13 1BS

Declares that this equipment conforms to the following directives,
2006/42/EC, 2000/14/EC, 2004/108/EEC

Tom Herridge
Technical Manager



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1. GENERAL INFORMATION

Congratulations for choosing one of our products! We would like to remind you that we took the safety of the operator, the efficiency of its use and the protection of the environment into great consideration when designing and manufacturing this product.

In order to preserve its features over time, please read and follow this manual carefully.

Particular attention must be awarded to the parts with the following symbol:



as they contain important instructions regarding safety when using the pump.

The Manufacturer is not liable for damage caused by:

- failure to comply with these instructions and the instructions for the machine which incorporates the pump;
- use of the pump not included in the list in the “DESIGNATED USE” section;
- failure to comply with current safety regulations and regulations for the prevention of accidents in the workplace when using the pump;
- incorrect installation
- failure to carry out the anticipated maintenance;
- modifications or actions without prior authorisation by the Manufacturer;
- use of non-original or non-specific spare parts for this model of pump;
- repairs which were not completed by a Skilled Technician.

1.1 TERMS OF THE GUARANTEE

The guarantee is valid for a period of 12 months from the date on the sales document (receipt, invoice etc.)

The purchaser has sole right to the replacement of the parts which the Manufacturer, or his authorised representative, deems faulty as regards their material or manufacture. This does not imply any right to compensation for any type of direct or indirect damage. Any costs for labour, packing and transportation are at the purchaser's expense.

Should the product be sent to the Manufacturer for repairs under this guarantee, it must be complete with all its original parts and not be tampered with upon arrival. Any request under this guarantee will be denied if this is not the case. All replaced parts become the exclusive property of the Manufacturer.

Any faults or failures which occur during or after the period of the guarantee do not imply the right to suspend payment or to any further extension.

This guarantee does not cover the replacement of the pump and automatically becomes void should the agreed terms of payment not be abided by.

The following are not covered by the guarantee:

- direct or indirect damage, of any type, caused by falls, incorrect use of the pump and failure to observe regulations regarding safety, installation, operation and maintenance which are contained in this manual and in the manual for the machine which incorporates the pump;
- damage caused by the inactivity of the pump for repairs;
- any parts which are subject to wear during normal use;
- any parts which are deemed faulty due to negligence or carelessness during use;
- damage caused by the use of non-original spare parts or accessories or not expressly authorised by the Manufacturer, and by repairs not completed by a Skilled Technician

The guarantee becomes void should the pump, and especially its safety devices, be tampered with and the Manufacturer is no longer liable.

The Manufacturer reserves the right to make any modification at any time which it deems necessary to improve the product and is not liable to make these modifications to previously manufactured products, be they delivered or under delivery.

The conditions in this section exclude any previous explicit or implicit condition.

1.2 THE ADDRESS OF THE MANUFACTURER

The address of the manufacturer of the pump is given in the “Declaration of the Manufacturer” at the front of the instruction manual.

1.3 USE AND CONSERVATION OF THIS OPERATING AND MAINTENANCE MANUAL

The operating and maintenance manual is an integral part of the pump and must be kept in a safe place for future reference so that it may be readily consulted in case of need.

The operating and maintenance manual contains important information for the safety of the operator and of any people near him and for the protection of the environment. In case of deterioration or loss, a new copy should be requested from the dealer or from an authorised service centre.

If the pump is passed on to a third party, please make sure this operating and maintenance manual is also given to the new owner.

We take great care when drawing up our manual. If you note any mistakes, please do inform the Manufacturer or an authorised service centre.

The Manufacturer reserves the right to modify, update and correct this manual without notice. It is illegal to copy this manual, even partially, without prior authorisation by the Manufacturer.

1.4 SYMBOLS

The symbol:



CAUTION

next to certain parts of the text, is to indicate that there is the firm possibility of injury to persons if the relative instructions and indications are not followed.

The symbol:

WARNING

next to certain parts of the text, is to indicate that there is the possibility of damaging the pump if the relative instructions are not followed.

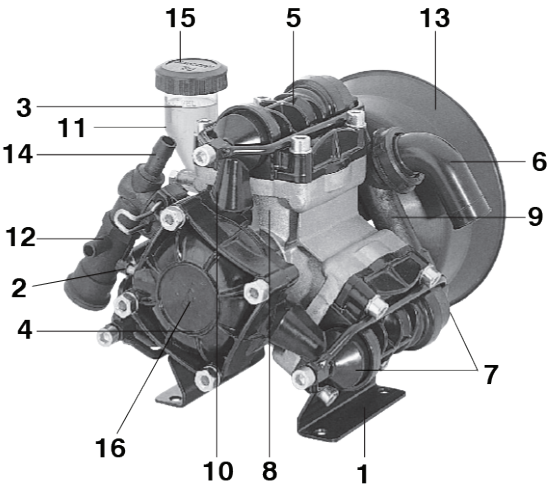
2. FEATURES AND TECHNICAL SPECIFICATIONS

	BP 125	
MECHANICAL CONNECTION		
Absorbed power at maximum rotation speed and pressure	5.0 kW 6.8 CV	
Maximum speed of rotation of pump	550 RPM	
Minimum speed of rotation of pump	400 RPM	
PUMP OIL	AGIP SAE 20W/40	
HYDRAULIC CONNECTION		
Maximum inlet water temperature	40°C / 104°F	
Minimum inlet water temperature	5°C / 41°F	
Maximum intake depth	1 m - 3.3 ft (for no longer than 10÷15 min: 3 m - 9.8 ft)	
Maximum inlet water pressure	0.1 bar / 1.45 psi	
PERFORMANCE AT MAXIMUM SPEED OF ROTATION		
Water flow at maximum pressure	l/min / US gpm	117 / 30.9
Water flow at 0 bar	l/min / US gpm	121 / 32.0
Maximum pressure	bar / psi	20 / 290
Sound level dB(A)	<70	
WEIGHT	kg / lb	13.0 / 28.6

All features and technical specifications are only indications. The Manufacturer reserves the right to modify the appliance as it deems necessary

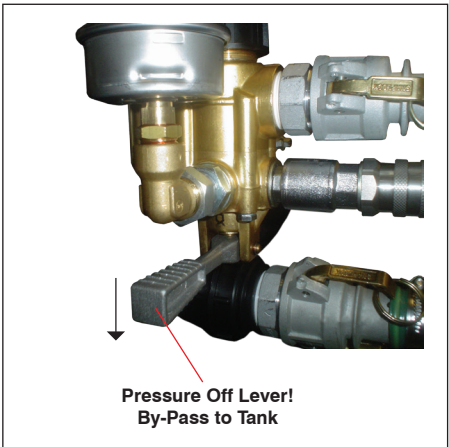
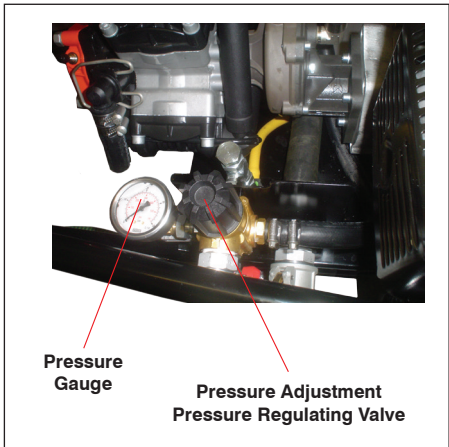
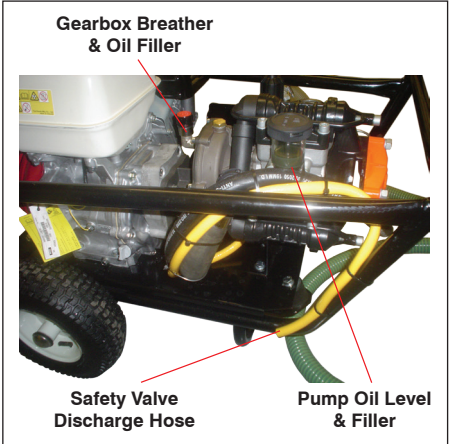
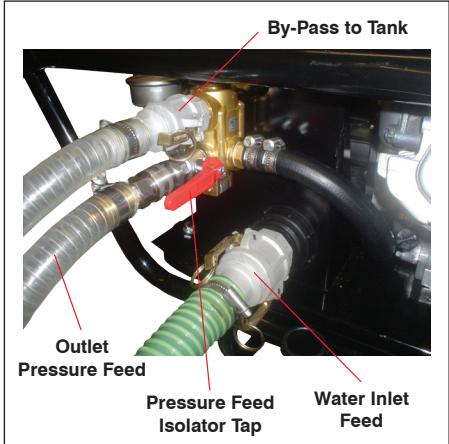
2.1 IDENTIFICATION OF COMPONENTS

1	Pump support
2	Valve
3	Volumetric oil compensator
4	Pressure accumulator
5	Pump head
6	Intake coupling
7	Intake/delivery valve cap
8	Pump crankcase
9	Intake manifold
10	Delivery manifold
11	Oil level indicator
12	Safety valve
13	Pump shaft protection
14	Delivery coupling
15	Oil cap
16	Identification label



BP 105-BP 125

2.1 IDENTIFICATION OF COMPONENTS continued



2.2 SAFETY DEVICES



CAUTION

- *The machine which incorporates the pump must always be provided with the safety devices described below.*
- *If the safety valve cuts in repeatedly, immediately stop operation of the machine, which incorporates the pump, and have it tested by a Skilled Technician.*
- *Any drainage from the safety valve must not leak into the environment.*
- *Should the protection of the pump shaft break or be damaged, the machine which incorporates the pump must not be used until it has been tested by a Skilled Technician.*
- *Do not place hands or feet on the pump shaft protection.*

a) Safety valve

This is standard for certain versions and is available as an optional accessory for others.

It is an appropriately calibrated, maximum pressure valve that discharges excess pressure should any anomaly occur in the pressure adjustment system.

b) Pump shaft protection

This is standard for certain versions and is available as an optional accessory for others. It is to prevent the operator from coming into contact with the moving parts of the pump shaft.

c) Pressure limit/adjustment valve

This is standard for certain versions and is available as an optional accessory for others.

This valve enables the adjustment of the operating pressure and permits the pumped fluid to return to the by-pass duct, thus preventing the creation of dangerous levels of pressure when delivery is closed or should pressure be set that is above permitted levels.

If a pressure limit/adjustment valve has devices to intercept/distribute the pumped liquid (e.g. taps), it is usually called a pump control unit. In this manual, the term control unit stands for both the pressure limit/adjustment valve and the pump control unit.

2.3 IDENTIFICATION LABEL

The identification label (**2.1 - 16**) contains the serial number and the main technical specifications for the pump: version, maximum delivery (at 0 bar/0 psi), delivery at maximum pressure, maximum pressure, and maximum speed of rotation. The adhesive identification label is located in a visible position on the pump.



CAUTION

- *If the identification label deteriorates during use, contact your dealer or an authorised service centre so they can be replaced.*

3. DESIGNATED USE



CAUTION

- *This pump is to be used exclusively for:*
 - *treating crops in agricultural and gardening applications;*
 - *pumping water-based detergents and dyes;*
 - *pumping water which is not for human consumption.*
- *The pump must not be used for:*
 - *water based solutions whose density and viscosity is greater than those of water;*
 - *solutions of chemical products if it is not known that they are compatible with the construction materials of the pump;*
 - *seawater or water with a high concentration of salt;*
 - *all fuels and lubricants;*
 - *infl ammable liquids or liquid gas;*
 - *liquids for human consumption;*
 - *all solvents and diluents;*
 - *all paints;*
 - *liquids at a temperature in excess of 40°C or less than 5°C;*
 - *liquids containing granules or solid, suspended parts.*
- *The pump must not be used to wash people, animals, energized electrical appliances, delicate objects, the pump itself or the machine that it is part of.*
- *The accessories (standard and optional) used with the pump must be those endorsed by the Manufacturer.*
- *The pump is not suitable for use in certain situations such as in corrosive or explosive atmospheres.*
- *Contact the Manufacturer's service centre before use on board vehicles, ships or airplanes, as there may be additional instructions for use.*

Any other use is considered improper.

The Manufacturer is not liable for any damage caused by improper or incorrect use.

4. OPTIONAL ACCESSORIES



CAUTION

- *The operation of the pump may be impaired if unsuitable accessories are used and they may even make it dangerous. Only use original accessories endorsed by the Manufacturer.*
- *Refer to the documents provided with the optional accessories for information regarding their general use, safety warnings, installation and maintenance.*

The standard accessories for the pump can be integrated with the following range of accessories:

- safety valve
- protection for pump shaft
- control unit
- intake filter (deep filter)
- various shapes and sizes of intake couplings
- pressure gauge
- high pressure delivery pipe
- pipe reel
- various types of sprinkler lances
- indicator of ruptured diaphragm

Please contact your dealer for further information.

5. OPERATION



CAUTION

- **The pump must not be put into operation if the machine in which it is incorporated does not comply with the safety requirements defined by European Directives. Their compliance is guaranteed if the CE mark is present together with the manufacturer's Declaration of Conformity for the machine that incorporates the pump.**
- Before starting to use the pump, read both this manual and the manual for the machine that incorporates the pump carefully. It is important to be sure that you have fully understood how both the pump and the machine that incorporates the pump work concerning the interception of the liquids.
- The pump must be used with care and attention. It is your responsibility to make sure that any infrequent users have read this manual and are acquainted with the operation of the pump; otherwise do not allow others to use the pump. Pumps must not be used by children or by unauthorised personnel.
- Comply with the safety warnings in the operating and maintenance manual of the machine that incorporates the pump especially as regards the use of personal protection (protective glasses, headphones, facemasks etc).
- Do not use the pump if:
 - the pump has been bumped
 - there are obvious leaks of oil.
 - there are obvious leaks of water.

In these circumstances, the pump should be tested by a Skilled Technician.

- It is especially important to pay great attention when the pump is used in areas where there are moving vehicles as these can crush or damage the delivery pipe and the sprinkler lance.
- During operation, never leave the pump unattended and make sure it is out of reach of children and animals. Pay particular attention when using it in kindergartens, nursing homes and old people's homes, as unsupervised children, elderly people and disabled people may be present in such places.
- Before starting to use the pump, put on clothing which guarantees adequate protection against the possibility of incorrect manoeuvres of the jet of pressurised water. Do not operate the pump near people unless they are also wearing protective clothing.
- High-pressure jets of water can be dangerous if they are not used properly. Do not point the jet in the direction of people, animals, and energized electrical appliances or towards the machine which incorporates the pump.
- Hold the sprinkler lance firmly during use: when operating its control lever, the operator is subjected to the backlash of the high pressure.
- Do not point the jet towards oneself or other people in order to clean off clothing or footwear.
- Do not point the high-pressure jet towards materials, which contain asbestos or other harmful substances.
- Make sure that the pump's moving parts are adequately protected and that they are not accessible to unauthorised personnel.
- Do not come within reach of the pump's moving parts, even if they are adequately protected.
- Do not remove the protective devices of the pump's moving parts.
- Do not carry out any maintenance on the pump if it is in use.
- Follow the instructions in the "Designated Uses" section.
- Do not modify the conditions of the installation of the pump, especially its attachment and its hydraulic connections.

- Do not operate any taps installed on the pump if they are not connected to an application that prevents the accidental leakage of the liquid being pumped.
- Do not tamper with controls and safety devices.
- The connection of the machine that incorporates the pump to the mains electric supply must be carried out by a Qualified Electrician according to the current regulations in the country where it is to be used.
- If the machine that incorporates the pump operates with a combustion engine, it must not be used in enclosed spaces.

5.1 PRELIMINARY PROCEDURES



CAUTION

- Complete the Manufacturer's recommended preliminary procedures for the machine that incorporates the pump.
- Check that all the delivery parts are closed or connected to applications, which are closed (for example, closed tap or closed sprinkler lance).
- Do not exceed the maximum level of accumulator inflation pressure (when present), indicated in the following table, at any time.
- A **Skilled Technician** must complete the special maintenance procedures.

a) When the pump is not in use, check that the oil level either corresponds to the reference notch on the volumetric compensator (**2.1 - 3**) or is visible from the level cap. Remember that the level of the oil must always be checked when the pump is not in use and has cooled down completely.

Refer to the types of lubricants listed in the “**FEATURES AND TECHNICAL SPECIFICATIONS**” section if it is necessary to top up the oil.

b) Check that the inflation of the pressure accumulator, if present, is correct using a common compressed air gun with a pressure gauge, i.e. the type used to check the pressure of motor vehicle tyres.

Inflation depends on the range of pressure that the pump must operate in, according to the following table:

PUMP OPERATING PRESSURE		INFLATION PRESSURE OF ACCUMULATOR	
bar	psi	bar	psi
2-5	29-73	2	29
5-10	73-145	2-5	29-73
10-20	145-290	5-7	73-102
20-50	290-725	7	102

WARNING

- For applications where the pump uses a cardan shaft, strain on the pump shaft must be avoided caused by incorrect use of the cardan shaft (poor lubrication of moving parts, incompatible turning radius for type of cardan shaft used).
- In case of use at very low temperatures, check that ice does not form inside the pump.
- Complete all routine maintenance, especially concerning the oil.

5.2 PIPE CONNECTIONS



CAUTION

- Do not connect up to the mains supply of drinking water.
- All pipes must be securely fixed to the relative coupling with grips.

Refer to **FIG 3. PAGE 15** for the intake, delivery and bypass connections: this depicts the general layout of a hypothetical machine incorporating the pump. Also refer to the following table:

1	Tank
2	Intake filter
3	Intake circuit
4	Pump
5	Delivery circuit
6	By pass circuit
7	Sprinkler lance (typical application)

- For use with a sprinkler lance:
 - Fully unroll the high-pressure pipe.
 - Use the appropriate grip to connect the high-pressure pipe to a tap on the pump or on the control unit.
 - Make sure the lever on the lance is closed and then connect the lance to the high pressure pipe.
- Connect the intake pipe to the relative coupling if the Manufacturer of the machine incorporating the pump has not already done so. Check the filter is clean.

WARNING

- The intake of the pump must use a tank at atmospheric pressure and the level of the liquid must be between 1m / 3.3ft above and 1 m /3.3 ft below the intake coupling (see fig. 8); never connect the pipe to pressurized water pipes.
- For periods of 10÷ 15 min, the intake of the pump can operate at drops of up to 3m/ 9.8 ft: it must not operate at drops in excess of this.
- The pump must be provided with an adequate intake filter. In case of doubt, contact a Skilled Technician. Check that the filter is perfectly clean at all times.
- The internal diameter of the intake and bypass pipes must be equal to the external diameter of the intake and bypass couplings respectively. They must have a nominal pressure of 10 bar /145 psi
- The internal diameter of the delivery pipes must be equal to the external diameter of the delivery couplings. Their nominal pressure must not be below the maximum pressure of the pump.
- Do not supply the pump with water at a temperature in excess of 40°C/104°F or below 5°C/ 41°F.
- Do not operate the pump for a long time if it is not connected to a water supply.
- Do not supply the pump with salt water or water containing impurities. In this event, run the pump for a few minutes with clean water.

5.3 START UP



CAUTION

- Complete any operations required to start up the machine that incorporates the pump as recommended by its manufacturer.
- Read the instructions and warnings on the label of chemicals to be distributed by the pump to take the appropriate steps in order to avoid danger for the operator or for the environment.

- Store all chemicals in a safe place out of children's reach.
- Should any chemicals come into contact with your eyes, wash immediately with water. Contact a doctor without delay and remember to take the container of chemicals with you.
- If any chemicals are swallowed, do not provoke vomiting. Contact a doctor without delay and remember to take the container of chemicals with you.
- Operating pressure must never exceed the maximum toleration level of the pump (refer to the "FEATURES AND TECHNICAL SPECIFICATIONS" section).

For the following points, please also refer to the documentation which is provided with the control unit.

- a) Set the delivery pressure to zero on the control unit so that it enters its "bypass" status.
- b) Start up the pump so that it can prime.
- c) Set the control unit to its "pressure" position.
- d) Turn the pressure adjustment knob on the control unit until the required amount of pressure is reached.

WARNING

- To allow the pump to prime quickly, follow the instructions at point (a) every time the pump is drained of liquid.
- We recommend checking the level of the oil during the initial hours of its operation and to top up the liquid if necessary as instructed in the '**PRELIMINARY PROCEDURES**' section.

6. SWITCHING OFF AND STORAGE

6.1 SWITCHING OFF



CAUTION

- Complete any operations required to switch off the machine that incorporates the pump as recommended by its manufacturer.

No part of the pump must be in motion and no pipe must contain liquid under pressure.

- a) Set the delivery pressure to zero as described in the "START UP" section.
- b) Switch the pump off.

6.2 STORAGE



CAUTION

- Complete any operations required to store the machine that incorporates the pump as recommended by its manufacturer.

WARNING

- Refer to the use and maintenance manual for the machine that incorporates the pump. After use, complete a cleaning cycle, making the pump take up clean water. Never store the pump with pumped liquid inside it.
- **The pump is not frost proof.**
In order to prevent the formation of ice inside the pump in cold areas, we recommend making the pump take up a motor vehicle grade anti-freeze before starting the "storage" procedures (diluted as instructed for the minimum temperature that the pump will be exposed to) and then drain it completely, making it operate for a few minutes without taking up any liquid.



CAUTION

- dispose of anti-freeze liquid correctly; do not throw it away in the environment.

7. CLEANING AND MAINTENANCE



CAUTION

• Only start cleaning and maintenance once the instructions in the 'Switching off' section have been completed, i.e. **no part of the pump must be in motion and no pipe must contain liquid under pressure..**

It is particularly important to always disconnect the electricity supply, if present.

7.1 ROUTINE MAINTENANCE

Follow the instructions in the 'SWITCHING OFF' section and abide by the recommendations in the table below.

INTERVAL FOR MAINTENANCE	ACTION
Each time used	Check the level and the status of the oil. Check the water intake filter and clean if necessary
Every 50 hours	Check the accumulator inflation pressure (when present). Check the water intake circuit is intact. Check the pump is securely fastened to the structure of the machine that incorporates the pump. Should the pump not be fastened securely, do not use the machine under any circumstance and contact a Skilled Technician (1)

(1) This must be controlled more frequently if the pump operates in circumstances with heavy vibrations (crawler tractors, combustion engines, etc.).

WARNING

• During use, the pump should not be too noisy and large amounts of water or oil should not drip from underneath it.

In this event, a Skilled Technician should test the appliance.

7.1i DIAPHRAGM RUPTURE

The rupture of one or more diaphragms can result in the mechanical parts of the pump being damaged by the liquids being pumped.

The following are symptoms of possible diaphragm rupture:

- oil takes on a whitish appearance (symptom of water in the oil)
- excessive consumption of oil
- sudden lack of oil in the volumetric compensator

WARNING

• To avoid the negative consequences of this malfunction, stop operation of the pump immediately and contact a **Skilled Technician** without delay (within 24 hours) who will take the necessary action.

If it is not possible to contact a **Skilled Technician** within the above time in case of diaphragm rupture, we recommend you drain the pump crankcase of the mixed oil and pumped liquid and then fill it with oil or diesel to prevent the formation of rust.

- The following are frequently the causes of diaphragm rupture:
 - bottlenecks in the intake circuit (inadequate pipe section, dirty filter, very dense liquid being pumped, etc)
 - the use of very aggressive chemicals

7.2 SPECIAL MAINTENANCE



CAUTION

- Only Skilled Technicians are authorised to carry out special maintenance.
- Dispose of waste oil correctly; do not throw it away in the environment

Follow the instructions in the table below for special maintenance.

INTERVAL FOR MAINTENANCE	ACTION
Every 300 hours	Check the intake and delivery valves (1)
At the end of every season or once a year	Check diagrams and replace if necessary Replace the oil (3) Check the pump screws are tight (4)

- 1) check more frequently if liquids are used with suspended abrasive particles.
- 2) we recommend replacing diaphragms regardless of their condition if particularly aggressive chemicals are used.
- 3) Oil must be changed when diaphragms are replaced; first oil change must take place after 300 hours
- 4) check more frequently if the pump operates in conditions of heavy vibration.

WARNING

- The data in the table are indications. Maintenance may be required more frequently in cause of particularly heavy use.

8. DISMANTLING AND DISPOSAL

Only trained personnel are allowed to dismantle the pump in accordance with the current regulations in the country where it is installed.

9. PROBLEMS, CAUSES AND SOLUTIONS



CAUTION

- Before undertaking any action, follow the instructions in the “SWITCHING OFF” section. If it is not possible to restore correct operation of the pump using the information in the table below, contact a Skilled Technician.

PROBLEM	CAUSE	SOLUTION
The pump does not prime	Water intake Adjustment valve positioned under pressure	Check the intake circuit is intact Set pressure to zero and put pump in bypass
The pump does not reach maximum pressure	Speed of pump rotation is inadequate Unsuitable application (for example: worn nozzle or too large nozzle)	Restore correct rotation speed Replace application
Irregular pressure and water flow (pulsating)	Water intake	Check the intake circuit is intact
Excessive vibration in delivery circuit	Pressure accumulator not correctly inflated	Restore correct inflation
Excessive noise associated with drop in the oil level	Bottle necks in intake circuit	Check intake circuit
Excessive consumption of oil and/or oil is whitish colour (presence of water in oil)	Rupture of one or more diaphragms	Refer to instructions in section 7.1.i

10. WARRANTY

Limited Warranty Supplied by Dual Pumps Ltd

Dual Pumps Ltd as suppliers warrants to the original purchaser, each new unit or other product supplied from its factory, for the period of twelve (12) months from the date of shipment from the factory, **six (6) months for equipment on hire or rental**, to be free from defects in material and workmanship under normal use and service. "Normal Use and Service" means not to exceed recommendations on maximum speeds, pressures and temperatures or handling fluids not compatible materials, as noted in the applicable Dual Pumps catalogue, technical literature and instructions. This warranty shall not apply to any pump or other product, which has been repaired or altered, to adversely affect the performance or reliability of the pump or product. **Lance or hoses are not covered by this warranty due to the adverse conditions of their use.**

Neither this warranty nor any implied warranty apply to damage caused by any of the following:

1. Freight damage
2. Frost or freezing damage
3. Damage caused by parts and/or accessories or components not obtained from or approved by Dual Pumps Ltd.
4. Any consequential or incidental damage arising from the use of any, pump or other products supplied by Dual Pumps Ltd.
5. Damage due to misapplication and/or misuse. The normal wear of moving parts or components affected by moving parts.

The liability of Dual Pumps Ltd under the foregoing warranty is limited to the repair or replacement at Dual Pumps Ltd option without charge for labour, mileage costs or materials of any parts upon return of the entire pump or other product or of the particular part to the Dual Pumps Ltd factory within the warranty period at the sole expense of the purchaser, which part shall upon examination appear to Dual Pumps Ltd satisfaction to have been defective in material or workmanship.

The liability of Dual Pumps Ltd under any theory or recovery (except any express warranty where the remedy is set forth in the above paragraph) for loss, harm or damage, shall be limited to the lesser of the actual cost, harm or damage, or the purchase price of the involved pump or other product when sold by Dual Pumps Ltd to its customer. Dual Pumps Ltd expressly warrants its pumps or other products as above stated.

There are no other express warranties. Any implied warranties, including implied warranty of merchantability or of fitness for a particular purpose, are limited in duration to twelve (12) months from the date of the purchase by the original purchaser, (six (6) months for the equipment on hire or rental). There is no implied warranty of fitness for a particular purpose or merchantability when this product is put to rental use.

No person including any dealer or representative of Dual Pumps Ltd is authorised to make any representation or warranty concerning Dual Pumps Ltd products on behalf of Dual Pumps Ltd, or to assume for Dual Pumps Ltd the obligations contained in this warranty. Dual Pumps Ltd reserves the right to make changes in design and other changes and improvements upon its products without imposing any obligation on itself to install the same, in its existing products or products then in process or manufacture.

This warranty does not affect any statutory rights that you may have.

Procedure for claiming under this warranty

The claimant must despatch the unit, product or part at his own expense to the Dual Pumps Ltd factory with a full detailed report for inspection, upon receipt Dual Pumps Ltd will inspect and decide whether the unit, product or part is in fact a genuine warranty claim. Upon this decision the pump, product or part will be replaced either free of charge under this warranty or despatched and charged to the original customer together with a full report should it be found not to be covered by this warranty.

Warranty claimed items, if required urgently will be despatched to the customer and charged for, on receipt of the claimed defective item Dual Pumps Ltd will decide whether the claim is valid and if so will issue a credit for the item. Should Dual Pumps Ltd find the claimed item to be out of warranty declarations the said charge will stand and be paid by the customer as normal.

The copyright of this manual belongs to Dual Pumps Ltd and must not be copied or reproduced without the express permission of the company.

FIG 3.

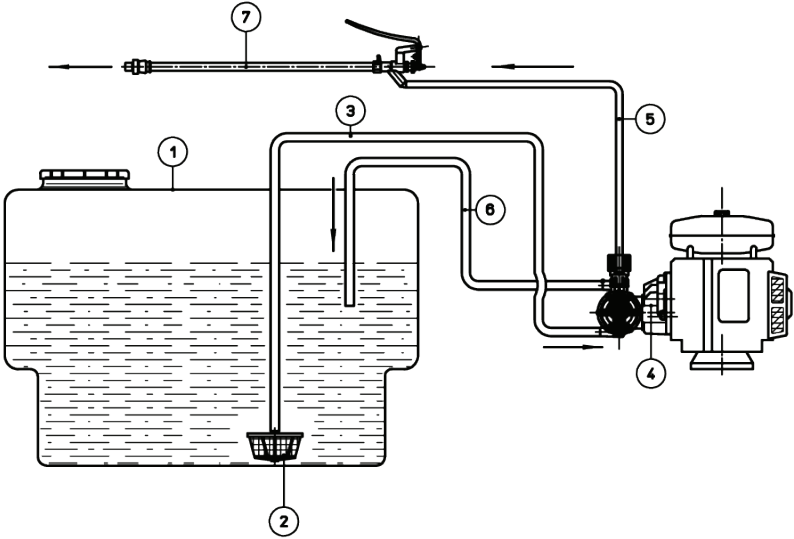
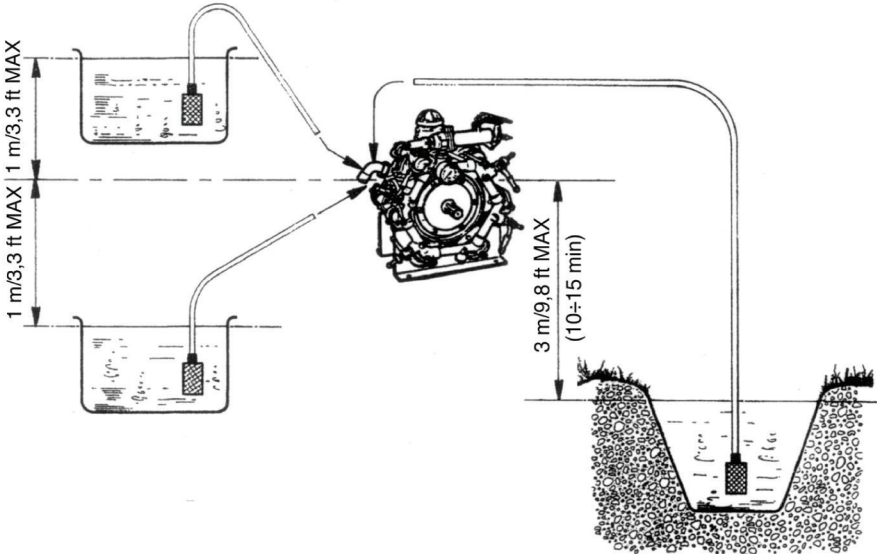


FIG 8.





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